

NUCLETRON MICRO-SELECTRON SOURCE RENEW ACCEPTANCE TEST THE EXPERIENCE IN NCKUH

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Purpose : The quality assurance procedures for Nucletron Micro-Seletron source renew were performed when the ¹⁹²Ir source changed. The basic items are source strength measurement, source position alignment and head radiation protection ability survey.

Materials and Methods : According to the suggestions of AAPM TG-40, 0.6 cc Farmer type ionization chamber and PRM well chambers were used to measure the source strength. Kodak V-films were used to check the source position alignment according to the autoradiography method. The head radiation protection ability was surveyed by Victoreen 450P.

Results : The source strength was over estimated from 0.6 cc Farmer type ionization chamber (around +1.5%) while the PRM chamber's reading appear under estimated. The source position can be accurated within 1mm and the head radiation protection is satisfied to the NRC and The Council of Atomic Energy's regulation.

Conclusion : The source strength and source position affect the treatment quality greatly. The PRM well type chamber is convenient for the routine source strength calibration. The head protection ability satisfies the regulation and is safe to the staffs.

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Key words: Brachytherapy, Source strength, Source position, Radiation leakage